

CLAIMS

What we claim as our invention is:

1. A method comprising:
casting a film comprising syndiotactic propylene polymer (sPP) at a film line speed of from about 35 to about 200 feet per minute.
2. The method of Claim 1 wherein said film line speed is from about 70 to about 150 feet per minute.
3. The method of Claim 1 wherein said film line speed is from about 90 to about 120 feet per minute.
4. The method of Claim 1 further comprising maintaining a casting temperature of less than about 430 degrees Fahrenheit.
5. The method of Claim 1 further comprising maintaining a casting temperature of less than about 350 degrees Fahrenheit.
6. The method of Claim 1 further comprising maintaining a casting temperature of less than about 300 degrees Fahrenheit.
7. The method of Claim 1 wherein said casting occurs on a cast roll, and wherein said cast roll is maintained at a temperature of from about 50 to about 130 degrees Fahrenheit.
8. The method of Claim 7 wherein said cast roll is maintained at a temperature of from about 70 to about 120 degrees Fahrenheit.
9. The method of Claim 7 wherein said cast roll is maintained at a temperature of from about 90 to about 110 degrees Fahrenheit.

10. The method of Claim 1 wherein said sPP comprises a peak melt temperature of from about 120 to about 140 degrees Celsius.
11. The method of Claim 1 further comprising adding a processing aid to said sPP prior to casting.
12. The method of Claim 11 wherein the concentration of said processing aid in said sPP is from about 0 to about 3,000 parts per million by weight of sPP.
13. The method of Claim 11 wherein the concentration of said processing aid in said sPP is from about 100 to about 1,500 parts per million by weight of sPP.
14. The method of Claim 11 wherein the concentration of said processing aid in said sPP is from about 900 to about 1100 parts per million by weight of sPP.
15. The method of Claim 11 wherein said processing aid comprises a fluoropolymer.
16. The method of Claim 11 wherein said processing aid comprises a fluoroelastomer.
17. The method of Claim 11 wherein said film comprises a coefficient of friction of less than about 1.0.
18. The method of Claim 11 wherein said film comprises a coefficient of friction of less than about 0.7.
19. The method of Claim 11 wherein said film comprises a coefficient of friction of less than about 0.4.
20. The method of Claim 11 wherein said film comprises a maximum tensile strength of at least about 4,200 pounds per square inch.
21. The method of Claim 11 wherein said film comprises a maximum tensile strength of at least about 5,000 pounds per square inch.

22. The method of Claim 11 wherein said film comprises a maximum tensile strength of at least about 6,000 pounds per square inch.
23. The method of Claim 11 wherein the haze of said film is greater than about 10 percent.
24. The method of Claim 11 wherein the 20 degree gloss of said film is less than about 20 percent.
25. The method of Claim 11 wherein the 45 degree gloss of said film is less than about 90 percent.
26. The method of Claim 11 wherein the percent elongation of said film is less than about 600 percent.
27. The method of Claim 1 wherein said film is from about 0.5 to about 6 mils thick.
28. The method of Claim 1 wherein said film is from about 1 to about 5 mils thick.
29. The method of Claim 1 wherein said film is from about 2 to about 4 mils thick.
30. A syndiotactic propylene polymer (sPP) film cast at from about 35 to about 200 feet per minute.
31. The sPP film of Claim 30 wherein said film comprises sPP.
32. The sPP film of Claim 31 further comprising a processing aid blended with said sPP prior to said film being cast.
33. The sPP film of Claim 32 wherein the concentration of said processing aid in said sPP is from about 0 to about 3,000 parts per million by weight of sPP.
34. The sPP film of Claim 30 wherein said sPP comprises a peak melt temperature of from about 120 to about 140 degrees Celsius.

35. The blend of Claim 32 wherein said film comprises a coefficient of friction of less than about 1.0.
36. The blend of Claim 32 wherein said film comprises a maximum tensile strength of at least about 4,200 pounds per square inch.
37. A system for casting a syndiotactic propylene polymer (sPP) film comprising:
 - sPP;
 - an extruder that receives and melts said sPP; and
 - a cast roll that receives the melted sPP and forms said sPP film;wherein casting said sPP film occurs on said cast roll at a film line speed of from about 35 to about 200 feet per minute.
38. The system of Claim 37 further comprising a processing aid blended with said sPP prior to casting.
39. The system of Claim 37 further comprising a casting temperature of less than about 430 degrees Fahrenheit.
40. The system of Claim 37 further comprising a casting temperature of less than about 350 degrees Fahrenheit.
41. The system of Claim 37 further comprising a casting temperature of less than about 300 degrees Fahrenheit.
42. The system of Claim 37 wherein said cast roll is maintained at a temperature of from about 50 to about 130 degrees Fahrenheit.